

**ABSTRACT OF THE DISCLOSURE**

A process for manufacturing an elastomeric sleeve of a joint for electrical cables. The sleeve has an electric field-control element, an electrical insulating element surrounding the electric field-control element, and at least a semiconductive element having two stress control screens. The process includes providing the electric field-control element and the two stress control screens on a supporting element; introducing the supporting element into a mould provided for moulding the electrical insulating element; filling with the electrical insulating material the space radially external to the electric field-control element and the stress control screens, the step of filling being carried out during the step of introducing; curing the electrical insulating material to obtain the electrical insulating element of the elastomeric sleeve. An apparatus for carrying out the process for manufacturing is also disclosed.